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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,804	10/20/2003	Takahito Suzuki	B0306T	2449

7590 09/29/2005

TAKEUCHI & TAKEUCHI  
1700 DIAGONAL ROAD  
SUITE 310  
ALEXANDRIA, VA 22314

EXAMINER
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TRAN, MINH LOAN

ART UNIT	PAPER NUMBER
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2826

DATE MAILED: 09/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/687,804

Applicant(s)

SUZUKI, TAKAHITO

Examiner

Minh-Loan T. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 July 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-4, 6, 7, 10 and 13 is/are rejected.  
7) ☒ Claim(s) 5, 8, 9, 11 and 12 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 20 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 4, 6 stand rejected under 35 U.S.C. 102(b) as being anticipated by Yamada (JP 2001-117058) or Applicant's Prior Art figures 4-7.

With regard to claim 1, figure 35 of Yamada discloses an optical semiconductor device comprising a substrate 10; a semiconductor laser 500 including a lower clad layer 20, an active layer 30, and an upper clad layer 40 formed in this order on the substrate 10; an electroabsorptive modulator 120 including a lower clad layer 20, a light absorption layer 30, and an upper clad layer 40 formed in this order on the substrate 10; a separation region 100 provided between the semiconductor laser 500 and the electroabsorptive modulator 120 and including a lower clad layer 20, a waveguide layer 30, and an upper clad layer 40 formed in this order on the substrate 10; wherein the upper clad layer 40 extends in a direction crossing a wave guide direction from the semiconductor laser 500 through the separation region 100 to the electroabsorptive modulator 120; the semiconductor laser 500, the separation region 100 and the electroabsorptive modulator 120 each has the outer sides (along the channel 60) provided in parallel with each other; and the upper clad layer 40 extends from the channel 60 up to the outer sides of the separation region 100.

With regard to claim 2, figure 35 of Yamada discloses a contact layer 50 provided on the upper clad 40, a first upper electrode (not numbered) provided on the contact layer 50 in the semiconductor laser 500 and a second electrode (not numbered) provided on the electroabsorptive modulator 120.

With regard to claim 3, figure 35 of Yamada discloses a lower electrode 80 provided on an under-side of the substrate 10.

With regard to claim 4, figure 35 of Yamada discloses a channel 60 from which the upper clad layer 40 is removed, the channel 60 being provided such that the channel 60 surrounds the center portion of the upper clad layer 40 that has not been etched.

With regard to claim 6, figure 35 of Yamada et al. discloses the upper clad layer 40 extends from the semiconductor laser 500 through the separation region 100 to the electroabsorptive modulator 120 via each outer side of the semiconductor laser 500, the separation region 100 and the electroabsorptive modulator 120.

Claims 10 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Murata (JP 64-28984).

With regard to claim 10, figure 1 of Murata discloses an optical semiconductor device comprising a substrate 101; a semiconductor laser 110 formed on the substrate 101 and including an active layer 103 for generating a laser beam in a beam direction; an electro-absorptive modulator 130 formed on the substrate 101 and including a light absorption layer 103 for receiving the laser beam from the semiconductor laser 110 to

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generate an electrical signal; a separation region 120 formed on the substrate 101 between the semiconductor laser 110 and the electro-absorptive modulator 130; the separation region 120 having side portions extending in parallel to the beam direction; and a slab 109 in the separation region 120; wherein the slab 109 extending continuously from one of the side portions to the other of the side portions in a direction crossing the beam direction. It is inherent that the slab 109 is for radiating heat because the slab 109 is formed of InP (the same material as the slab 14 of the present application) and disposed between the semiconductor laser 110 and the electro-absorptive modulator 130.

With regard to claim 13, figure 1 of Murata discloses the semiconductor laser 110 and the electro-absorptive modulator 130 having upper electrodes 108 respectively, and the slab 109 is connected to the upper electrodes 108.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada (JP 2001-117058) or Applicant's Prior Art figures 4-7.

Figure 35 of Yamada discloses all the subject matter claimed except for the

contact layer is removed from the separation region. However, it would have been obvious to one of ordinary skill in the art to have the contact layer is removed from the separation region of the Yamada's device because the separation does not have the electrode.

### ***Claim Objections***

3. Claim 5 is objected to because of the following informalities:

In claim 5, line 3, "reparation" should be changed to --separation--.

Appropriate correction is required.

### ***Allowable Subject Matter***

4. Claims 5, 8, 9, 11 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Response to Arguments***

5. Applicant's arguments filed 7/21/2005 have been fully considered but they are not persuasive.

It is argued, at page 11 of the remarks, that "In Yamada, there is no disclosure or suggestion regarding the upper clad layer **continuously extending** in a direction crossing the wave guide direction from the semiconductor laser to the electro-absorptive modulator" and at page 12 of the remarks, that "Fig. 5 does not show the upper clad layer **continuously extending** in a direction crossing the wave guide direction from the

semiconductor laser to the electro-absorptive modulator.” However, figure 35 of Yamada (JP 2001-117058) or Applicant’s Prior Art figures 4-7 do show the upper clad layer 40 extends in a direction crossing the wave guide direction up to the side of the separation region 100. Further, in response to applicant’s argument that the references fail to show certain features of applicant’s invention, it is noted that the features upon which applicant relies (i.e., the upper clad layer **continuously extends** in a direction crossing the wave guide direction up to the side of the separation region) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

### ***Conclusion***

6. Applicant’s amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh-Loan T. Tran whose telephone number is (571) 272-1922. The examiner can normally be reached on Monday-Friday 9:00 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mlt  
09/2005



Minh-Loan T. Tran  
Primary Examiner